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In re Patent Application of: Bruce M. SCHENA et al.

Application No.: 09/734,953

Examiner: Jeffery A. Brier

Filed: December 11, 2000

Art Unit: 2672

Confirmation No.: 6372

For: **FORCE FEEDBACK INTERFACE DEVICE WTH FORCE FUNCTIONALITY BUTTON**

1. Transmittal of Documents;
2. Request for Continued Examination Under 37 C.F.R. 1.114;
3. Information Disclosure Statement Transmittal; Information Disclosure Statement;
PTO/SB/08 (1 of 2) with copies of (36) cited references provided on CD and PTO/SB/08 (2 of 2);
4. Check for \$770.00; and
5. One Return Postcard.

Dated: July 29, 2004

Attorney Docket No.: IMMR-036/01US

Client/Matter: 302101-2085

Atty/Secy: EBM:ajo

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Attorney Docket No. IMMR-036/01US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Bruce M. SCHENA et al.

Serial No.: 09/734,953

Examiner: Jeffery A. Brier

Filed: December 11, 2000

Art Unit: 2672

Confirmation No. 6372

For: **FORCE FEEDBACK INTERFACE DEVICE WITH FORCE FUNCTIONALITY
BUTTON**

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,
Applicant(s) hereby submits the following information in conformance with 37 C.F.R.
§§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A (1 of 2) is provided on the enclosed CD.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos. 08/965,720 (now U.S. Patent No. 6,166,723), 08/560,091 (now U.S. Patent No. 5,805,140), 08/756,745 (now U.S. Patent No. 5,825,308) and/or 08/881,691 (now U.S. Patent No. 6,100,874) to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. ___ and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) ____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) ____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed within any one of the following time periods:

- ☐ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in this international application;
- ☐ before the mailing date of a first office action on the merits; or
- ☒ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.


It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: July 29, 2004

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Respectfully submitted,
COOLEY GODWARD LLP

By:



Erik B. Milch
Reg. No. 42,887



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First Named Inventor

Bruce M. Schena

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Jeffery A. Brier

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U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,422,941	7/23/2002	Thomer et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
		5,436,622	7/25/1995	Gutman et al.	
		5,283,970	2/8/1994	Aigner	
		5,186,695	2/16/1993	Mangseth et al.	
		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
		5,022,384	6/11/1991	Freels	
		4,885,565	12/5/1989	Embach	
		4,484,191	11/20/1984	Vavra	
		4,464,117	8/7/1984	Foerst	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.
		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992

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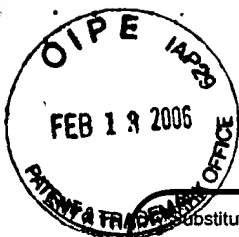
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First Named Inventor

Bruce M. Schena

Art Unit

2672

Examiner Name

Jeffery A. Brier

Attorney Docket Number

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

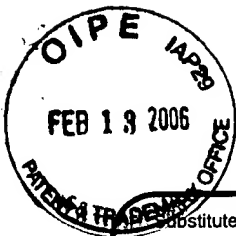
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		Number	Kind Code ² (if known)			
		5,799,108		08/1998	Salcudean et al.	
		5,623,642		04/1997	Katz et al.	
		5,591,924		01/1997	Hilton	
		5,589,828		12/1996	Armstrong	
		5,576,727		11/1996	Rosenberg et al.	
		5,570,111		10/1996	Barrett et al.	
		5,512,919		04/1996	Araki	
		5,467,763		11/1995	McMahon et al.	
		5,459,382		10/1995	Jacobus et al.	
		5,451,924		09/1995	Massimino et al.	
		5,445,166		08/1995	Taylor	
		5,438,529		08/1995	Rosenburg	
		5,436,640		07/1995	Reeves	
		5,436,638		07/1995	Bolas et al.	
		5,436,542		07/1995	Petelin et al.	
		5,429,140		07/1995	Burdea et al.	
		5,428,748		06/1995	Davidson et al.	
		5,417,696		05/1995	Kashuba et al.	
		5,412,880		05/1995	Raab	
		5,402,582		04/1995	Raab	
		5,397,323		03/1995	Taylor et al.	
		5,396,267		03/1995	Bouton	
		5,389,865		02/1995	Jacobus et al.	
		5,384,460		01/1995	Tseng	
		5,379,663		01/1995	Hara	
		5,354,162		10/1994	Burdea et al.	
		5,351,692		10/1994	Dow et al.	
		5,290,276		03/1994	Kwok	
		5,275,565		01/1994	Moncrief	
		5,264,768		11/1993	Gregory et al.	
		5,262,777		11/1993	Low et al.	
		5,259,894		11/1993	Sampson	
		5,259,120		11/1993	Chapman et al.	
		5,251,156		10/1993	Heier et al.	
		5,251,127		10/1993	Raab	
		5,243,266		09/1993	Kasagami et al.	

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		Number Kind Code ² (if known)	MM-DD-YYYY	Applicant of Cited Document	Relevant Passages or Relevant Figures Appear
		5,230,623	07/1993	Guthrie et al.	
		5,209,131	05/1993	Baxter	
		5,204,824	04/1993	Fujimaki	
		5,189,806	03/1993	McMurtry et al.	
		5,187,874	02/1993	Takahashi et al.	
		5,184,319	02/1993	Kramer	
		5,184,306	02/1993	Erdman et al.	
		5,182,557	01/1993	Lang	
		5,181,181	01/1993	Glynn	
		5,178,012	01/1993	Culp	
		5,148,377	09/1992	McDonald	
		5,143,505	09/1992	Burdea et al.	
		5,142,506	08/1992	Edwards	
		5,139,261	08/1992	Openiano	
		5,132,672	07/1992	Clark	
		5,131,844	07/1992	Marinaccio et al.	
		5,128,671	07/1992	Thomas, Jr.	
		5,126,948	06/1992	Mitchell et al.	
		5,116,051	05/1992	Monocrief et al.	
		5,088,055	02/1992	Oyama	
		5,088,046	02/1992	McMurtry et al.	
		5,072,361	12/1991	Davies et al.	
		5,050,608	09/1991	Wtanabe et al.	
		5,040,306	08/1991	McMurtry et al.	
		5,007,300	04/1991	Siva	
		5,007,085	04/1991	Greanias et al.	
		4,983,786	01/1991	Stevens et al.	
		4,982,504	01/1991	Soderberg et al.	
		4,962,591	10/1990	Zeller et al.	
		4,961,267	10/1990	Herzong	
		4,961,138	10/1990	Gorniak	
		4,945,501	07/1990	Bell et al.	
		4,945,305	07/1990	Blood	
		4,942,545	07/1990	Sapia	
		4,907,973	03/1990	Hon	
		4,907,970	03/1990	Meenen, Jr.	

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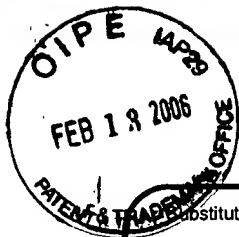
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		4,891,889	01/1990	Tomelleri	
		4,888,877	12/1989	Enderle et al.	
		4,849,692	07/1989	Blood	
		4,819,195	04/1989	Bell et al.	
		4,803,413	02/1989	Kendig et al.	
		4,798,919	01/1989	Miessler et al.	
		4,791,934	12/1988	Brunnett	
		4,787,051	11/1988	Olson	
		4,775,289	10/1988	Kazerooni	
		4,769,763	09/1988	Trieb et al.	
		4,750,487	06/1988	Zanetti	
		4,734,685	03/1988	Watanabe	
		4,704,909	11/1987	Grahn et al.	
		4,703,443	10/1987	Moriyasu	
		4,689,449	08/1987	Rosen	
		4,688,983	08/1987	Lindborn	
		4,679,331	07/1987	Koontz	
		4,676,002	06/1987	Slocum	
		4,654,648	03/1987	Herrington et al.	
		4,653,011	03/1987	Iwano	
		4,638,798	01/1987	Shelden et al.	
		4,632,341	12/1986	Repperger et al.	
		4,601,206	07/1986	Watson	
		4,593,470	06/1986	Davies	
		4,571,834	02/1986	Fraser et al.	
		4,550,617	11/1985	Fraignier et al.	
		4,550,221	10/1985	Mabusth	
		4,477,973	10/1984	Davies	
		4,448,083	05/1984	Hayashi	
		4,436,188	03/1984	Jones	
		4,398,889	08/1983	Lam et al.	
		4,216,467	08/1980	Colston	
		4,148,014	04/1979	Burson	
		4,125,800	11/1978	Jones	
		3,944,798	03/1976	Eaton	
		3,890,958	06/1975	Fister et al.	

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Application Number	09/734,953
Filing Date	December 11, 2000
First Named Inventor	Bruce M. Schena
Art Unit	2672
Examiner Name	Jeffery A. Brier
Attorney Docket Number	IMMR036/01US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		3,875,488	04/1975	Crocker et al.	
		3,795,150	03/1974	Eckhardt	
		3,531,868	10/1970	Stevenson	
		3,490,059	01/1970	Paulsen et al.	
		2,906,179	09/1959	Bower	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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		JP	4-34610		05/1990		
		WIPO	WO95/02233		01/1995		
		WIPO	WO95/20787		08/1995		
		WIPO	WO95/32459		11/1995		
		WIPO	WO95/16397		05/1996		
		WIPO	WO95/22591		07/1996		
		WIPO	WO96/42078		12/1996		
		WIPO	WO97/12357		04/1997		
		WIPO	WO97/19440		05/1997		
		UK	2254911		10/1992		
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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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		WINEY III, "Computer Simulated Visual and Tactile Feedback as an Aid to Manipulator and Vehicle control", Massachusetts Institute of Technology, 1981.
		TAN, HONG Z., "Human Factors for the Design of Force-Reflecting Haptic Interfaces", Tan, Srinivasan, Eberman, & Cheng, ASME WAM '94.
		TAN, HONG Z., et al., "Manual Resolution of Compliance When Work and Force Cues are Minimized," ASME 1993, DSC-vol. 49, pp. 99-104.
		SMITH, GEOFFREY, "Call It Palpable Progress," Business Week, Oct. 9, 1995, pp. 93, 96.
		SLOCUM, ALEXANDER, H., "Precision Machine Design", Massachusetts Institute of Technology. Prentice Hall, Englewood Cliffs, New Jersey, 07632.
		ROSSENBERG, "Using Force Feedback to Enhance Human Performance in Graphical User Interfaces", Apr. 1996, www.acm.org/sigch/ch;96.
		ROSENBERG, LOUIS, "A Force Feedback Programming Primer," Immersion Corp., 1997, pp. 1-177.
		ROSENBERG, LOUIS B., "Virtual fixtures as tools to enhance operator performance in telepresence environments", Stanford University, Center for Design Research, Stanford, CA 94305, SPIE Telemanipulator Technology, 1993.
		ROSENBERG, LOUIS B., "The Use of Virtual Fixtures as Perceptual Overlays to Enhance Operator Performance in Remote Environments," Air Force Material Command, Sep. 1992, pp. 1-42.
		RAMSTEIN, C et al., "The Pantograph: A Large Workspace Haptic Device for a Multimodal Human-Computer Interaction," Computer-Human Interaction, CHI '94, pp.1-3
		OUH-YOUNG, MING et al., "Using a Manipulator for Force Display in Molecular Docking," IEEE 1988, pp. 1824-1829.
		OUH-YOUNG et al., "Force Display Performs Better than Visual Display in a Simple 6-D Docking Task," Int'l Conf. on Robotics and Automation, IEEE CH2750, 1989, pp.1462-1466
		MINSKY, M. et al., "Feeling and Seeing: Issues in Force Display," ACM 089791-351-5, 1990, pp. 235-245, 270.
		MEYER, KENNETH et al., "A Survey of Position Trackers," The Massachusetts Institute of Technology 1992, Presence, vol. 1, No. 2.
		KRUEGER, MYRON W., Artificial Reality 1988, pp. 54-75.

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		KOTOKU, TETSUO et al., "Environment Modeling for the Interactive Display (EMID) Used in Telerobotic Systems," IEEE Nov. 3-5, 1991, pp. 99-1004.
		KOTOKU, T., "A Predictive Display with Force Feedback and its Application to Remote Manipulation System with Transmission Time Delay," Proc. of 1992 IEEE/RSI Int'l Conf. Intelligent Robots and Systems, IEEE 0-7803-0737-2, 1992, pp. 239-246
		KIM, WON S. et al., "Graphics Displays for Operator Aid in Telemanipulation," IEEE 1991, pp. 1059-1067.
		KILPATRICK, PAUL JEROME, "The Use of A Kinesthetic Supplement in an Interactive Graphics System", The University of North Carolina at Chapel Hill, Ph.D., 1976, Computer Science.
		IWATA H., "Artificial Reality with Force-feedback," Computer Graphics, vol. 24, No. 4, 1990, pp. 165-170.
		HERNDON, J.N., et al., "The State-of-the-Art Model M-2 Maintenance System," Proceedings of the 1984 National Topical Meeting on Robotics and Remote Handling in Hostile Environments, American Nuclear Society, pp. 59-65.
		HASSER, CHRISTOPHER JOHN, "Tactile Feedback for a Force-Reflecting Haptic Display," The School of Engineering, University of Dayton, Dec. 1995, pp. iii-xii & 1-96.
		FISHER, S.S. et al., "Virtual Environment Display System," ACM Interactive 3D Graphics, Oct. 1986.
		BUTTOLO, PIETRO, "Hard Disk Actuators for Mini Teloperation", Proceedings SPIE, Telemanipulator and Telepresence Technologies, Symposium, pp. 55-61, Boston, Oct. 31, 1994.
		BURDEA, GRIGORE et al., "A Portable Dextrous Master with Force Feedback," Presence: Teleoperators and Virtual Environments, MIT Press, Jun. 1991.
		3D Human Interface Tool, Immersion Probe™, Immersion Human Interface Corporation 1994.
		"Useful Technology for Your Idea File," Design News, Mar. 7, 1994, pp. 63.
		"The Personal Digitizer™," Immersion Human Interface Corporation 1994.
		"Proceedings of the IFIP Congress 65," International Federation for Information Processing, Information Processing 1965, vol. 3, New York, May 24-29, 1965, pp. 506
		"High Performance Model of the Immersion Probe," Immersion Probe-MD.TM., Immersion Human Interface Corporation.

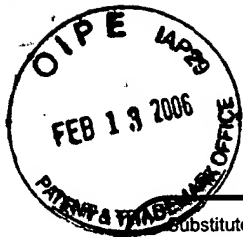
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		"Foot-Operated Mouse," IBM Technical Disclosure Bulletin, Apr. 1986, vol. 28, No. 11.

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